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### Dissertation on cholera infantum, or summer complaint of children

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Subject of  
Dissertation.  
Cholera Infantum, or  
Summer Complaint of  
Children.

American Physicians have the credit of giving the name Cholera Infantum to this disease, which has very properly been described as indigenous & peculiar to the United States. It is asserted that writers of other parts of the world have not reported any affection of the bowels & stomach, from which young children have suffered, which resembles in all its characteristics, the Infantile Summer Complaint of this country; And we have reason to

believe that no disease of children has been so frequently & extensively prevalent, & so dreadfully fatal elsewhere. Doctor Wood has expressed the opinion that "this affection though probably not altogether unknown in Europe, is so rare as to have escaped the particular notice of writers". Considering its fatality & frequency, we can speak of it as one of the "peculiar institutions" of this country, from the evils of which we should rejoice to be free. It is considered one of the most destructive diseases, to which infants in the United States are exposed during the period of primary dentition. In Philadelphia, in 10 years from 1835 to 1844, inclusive, 2583 cases which terminated fatally, were reported, as having occurred among children under 5 years of age, being about 10 per cent of the deaths of children under that age, & about 5 per cent of the entire mortality.

It has occurred most commonly in the latter part of the second summer of childhood prevailing most extensively & terminating most fatally, in the larger & more densely peopled cities. Small cities have also been visited by its dreadful ravages, & it has occasionally, in country villages, given undoubted evidence of its unwelcome presence. Probably a greater part of the cases in the country towns or villages, have been in malarious districts, but it may occur in any locality. And although called a "Summer Complaint" it has been reported as having occurred in one of the Southern States in the winter. We therefore conclude that infants during the irritation of primary dentition, even though enjoying the comparatively pure air of the country, or though it may be in the cooler months, are yet liable to an attack of Cholera Infantum. It has been generally spoken of as



exclusively a disease of warm or hot weather, & has been limited by writers to Summer & Autumn, in the Eastern & Middle & Western States & to Spring, Summer & Autumn in the Southern States.

### Nature of the Disease.

It is endemic, or epidemic, having been sometimes confined strictly to <sup>a</sup> certain locality, & at other times, prevailing in different parts of large cities, & attacking a large number of children at nearly the same time. Of the peculiarity of the emanations to which it can be attributed, (if properly to any), we have no positive knowledge. From the morbid appearances, & the prominent symptoms it is concluded that it essentially consists in inflammation & irritation of the mucous membrane <sup>of the alimentary canal,</sup>; either with or without congestion of the liver. There is probably a specific poison which operates upon the mucous surfaces, in connection with other influences.

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Why it prevails so frequently in our cities,  
& not in those of other countries we know  
not. In narrow streets, & ill-ventilated or  
non-ventilated apartments it is most fatal,  
acting as a destructive poison, which may  
carry the victim beyond the reach of anti-  
dotes or remedies, before the physician is  
consulted.

### Causes.

The endemic causes before mentioned  
in some instances being continued thro,  
weeks of hot or warm weather, in con-  
nection with the enervating effects of  
heat, & the irritation of dentition, are  
predisposing, & improper food, changes  
of temperature, cool nights following the  
warm days, vitiated air & indigestion  
are exciting or propinquate causes.

So also, Worms, change of diet, want  
of nutritious food, & excessive drinking, either  
by the child or mother, have been mentioned.

## Symptoms.

6.

Frequently the attack has been preceded by a loss of appetite, & impaired digestion. Vomiting is a characteristic & prominent symptom, being generally persistent, & sometimes in fatal cases, terminating rapidly, it continues almost to the end of life. In some cases the vomiting is attended with profuse diarrhoea, occurring simultaneously, or alternately.

In other cases the diarrhoea has preceded the attack of vomiting. The matter dejected at first is commonly thin & watery, having but little color; in some cases the evacuations are very frequent & small, & in others copious, & frequent, being exceedingly various in character & quantity; perhaps more commonly tinged with green, or a yellowish color. They may be slimy, or turbid, or may contain undigested food, or be marked with bloody streaks. They do not generally have the ordinary smell of faeces; Convulsions have occurred, in



some instances.

7.

There is generally more or less febrile excitement, which is frequently irregular, in some cases the pulse being frequent, & weak, in other cases frequent & full. There is great thirst, which is in some instances quite insatiable, & increased by indulgence.

The mouth is dry, parched, & hot. The head & abdomen feel hot to the touch, & there is frequently evidence ~~of~~ of pain in the abdomen, & sometimes in the head also.

In severe cases the emaciation is exceedingly rapid, the skin is in folds, hanging loosely, from loss of flesh, & relaxation.

In cases of less febrile excitement, the countenance is pallid, the features appear shrunken, the eyes ~~appear~~ large, brilliant, & intelligent, but if the child sleeps, there is a death-like appearance, from the excessive paleness & emaciation.

The child sleeps with the eyes but partially closed, & in some cases may appear to be in an imperfect slumber.

There is commonly, if not always, great prostration, which may appear later in some cases, according to the constitution & temperament, & according to the greater or less violence of the disease. Skin on forehead in some instances is tight, & of <sup>a</sup> dingy hue. The tongue which at first had a slimy coat, of a light color, yellowish or white, becomes dark & dry, & in fatal cases nervous prostration is complete, brain is affected, insensibility & coma gradually or more rapidly developed, give evidence of a hopeless case.

The Duration of the disease varies greatly. from a few hours in which life may become extinct, to a series of weeks or months, after which under favorable circumstances, child may recover, After a desperate struggle, if the patient is sustained by proper care in the use of food & remedies.



## Diagnosis.

9.

This is not difficult. The vomiting is more persistent, & the diarrhoea is more profuse & obstinate, The distress in the intervals is also greater than in any other infantile disease which we are called to combat. There may be some cases of a milder form, which have symptoms intermediate between well-developed Cholera Infantum, & an ordinary case of gastro-enteritic irritation, or Cholera Infantum may follow an attack of simple irritation from dentition. The appearance & character of the faces is quite different usually.

## Prognosis.

If the patient can be removed from impure air to a well-ventilated locality, & the diet be carefully restricted, a favorable prognosis can be given even in severe cases; Especially if the brain is not involved, there is hope.



10  
A report of a case may not be uninteresting.

The patient was a boy of good constitution, but highly nervous temperament, living in the State of New York, in an agricultural district, in an isolated farmhouse a mile from the neighbouring village, in what is called a healthy locality. His age was 15 months, & he had not been weaned. He had 3 months previously an attack of Intermittent Fever, & although an active, vigorous boy at the time of the attack of Cholera Infantum, it is probable that his nerves had not fully recovered from the effects of the fever. He had been considered well by his mother, excepting a slight diarrhoea. In the month of July he was severely attacked in the night, with copious evacuations from the bowels, soon followed by persistent vomiting.

A physician was sent for, but not being found, the writer of this, who was a student, was requested to attend the patient. From the report of symptoms of distress, with the other symptoms, I took <sup>with me</sup> some Morphine in doses of  $\frac{1}{8}$  of a grain, & also some prepared chalk & acetate of lead. The mother of the child had noticed that his sleep had been frequently disturbed by twitching of the arms & legs, & he had given evidence of pain waking & crying, before the attack of diarrhoea & vomiting. I found him purging & vomiting, with short intervals of great distress. Pulse  $138^{\frac{170}{n}}$  & a part of the time so frequent that I could not count it, a full, bounding pulse, head hot, skin moist, tongue covered with a yellowish coat, a nearly white, eyes bright & intelligent, but expressing alarm, & anxiety. Abdomen hot & tender, feet cool, urine suppressed.



Warm water was ordered for bathing the feet, & a dose of Sulph. Morphine  $\frac{1}{8}$  of a grain administered, but promptly ejected with increased vomiting. At this time some irritating matter was removed from the stomach which appeared like undigested food, though a small quantity. The second dose of Morphine was given & less vomiting followed, of slimy & watery fluid. Probably a part of the dose remained in the stomach. Castor Oil was given, followed by a powder of prepared chalk & acetate of lead, & the feet put in warm water, with cold water to the head, which continued excessively hot. Child became quiet for a short time was put in bed, feet were warm, & he was almost asleep, when he was seized with convulsions, severe & irregular. He was plunged in a warm bath, taken out very soon & wrapped in warm flannel.

13,  
The convulsions ceased, he was placed in bed, & was greatly relieved. Symptoms of nervous irritation continued. The morphine was continued once in 2 hours. The very frequent evacuations of the bowels continued but the vomiting did not return after the warm bath, & the cessation of the convulsions. The gums were examined & were found tender & inflamed, as they had been frequently during the two months previous. There were no teeth that appeared to indicate relief by the use of the lancet.

Friction to the feet & hands was applied continuously, & cold water to the head. The powders of chalk & acetate of lead were continued, one to be given every 6 hours. The child was placed in a large well-ventilated room, was bathed twice a day, nursed regularly once in three hours, the appetite gradually returning, & the symptoms gradually improving, except the diarrhoea which continued 4 months.

Frequently however the disease has overwhelmed the patient at the first attack, & removal to a locality more favorable for recovery has been impracticable; in some cases death has occurred within 24 hours; Or if circumstances are unfavorable for recovery, as they frequently are in large cities, there may be an apparent arrest of disease, but soon relapsing again the patient becomes exhausted, or the brain is affected, & death achieves the victory.

Post-Mortem Examinations have given evidence of inflammation of the stomach & bowels, & in some cases hepatic congestion. Commonly the redness has been observed in small patches in the stomach & small intestines, & enlarged mucous follicles have been discovered; The duodenum & jejunum have been reported as bearing marks of ulceration in some cases.



In some instances the liver is found discolored, & enlarged to an immense size. If the disease has advanced to what has been called the third stage attended with stupor & coma, the brain may be found in a state of disorganisation & softening.

Dr. Horner reported pus in the colon. The bladder has been found contracted & empty. Dr. Condie states that if the case terminates early paleness of the mucous coat, & congestion of the liver may be the only morbid appearances discoverable.

### Treatment.

Several important points are indicated in the management of the disease. 1<sup>st</sup> Remove the exciting cause, expelling <sup>if possible</sup> all irritating matters from the bowels & stomach. 2<sup>nd</sup> If any cannot be removed, attempt to counteract their effect. 3<sup>d</sup> Diminish the nervous excitement & irritability.

4<sup>th</sup> Change or increase the secretions.

5<sup>th</sup> Apply counter irritants to the skin.

6<sup>th</sup> Diminish the excessive discharges.

7<sup>th</sup> Insist upon a change of air & of locality if possible.

8<sup>th</sup> Insist upon cleanliness, frequent bathing, good nursing, quiet, & good food.

1<sup>st</sup> to remove the exciting cause, as soon as the distressing vomiting can be checked give a cathartic sufficient to thoroughly evacuate the bowels, without irritating.

Castor Oil, or Magnesia, are proper.

2<sup>nd</sup> to counteract the effect of irritating or offensive matter in the stomach antacids should be given.

3<sup>rd</sup> to diminish nervous irritability opiates are recommended -

4<sup>th</sup> to change secretions, & act upon the liver. Calomel may be cautiously used.

5<sup>th</sup> counter-irritation may be produced by friction or mustard, the mustard should not be used if the skin is hot.



6<sup>th</sup> to arrest excessive evacuations of the bowels give astringents according to the degree of relaxation. Acetate of lead, catechu, chalk, tannin &c.

7<sup>th</sup> A change of air & of locality are often important, & may decide the result. If a child can be taken from the city to the country, or to a part of the city where, good air with a full proportion of oxygen, & the unobstructed light of the sun's rays can be enjoyed, it may be the means of saving life.

8<sup>th</sup> Bathing, cleanliness & warmth of clothing, nutritious food given regularly, & all the minutiae of good nursing, are of great importance. If there is not great exhaustion, leeches may be applied to the abdomen. Warm fomentations may give relief. Bathing in salt water is recommended. Tonics in cases of debility or prostration.

The mouth should be examined, & the lancet used if necessary to give relief to the gums. Doctor Wood advises the use of castor oil in the form of an oleaginous mixture, made with gum arabic, loaf sugar, & mint or cinnamon water, & laudanum, in the advanced stage.

### The Diet.

The best food for the infant not weaned is the milk of a healthy mother, which should not be given more frequently than once in 3 hours generally. Probably the best substitute for this is the milk of a new milk cow, which should be recent, diluted with two parts of water, & sweetened with loaf sugar. To allay excessive thirst cold water with a solution of some gum arabic can be given in small quantity. If the system is much enfeebled sustaining food should be given, & the appetite gratified cautiously, as it returns.

John Ritkin. Palmyra, N. Y. 1861.







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